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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/015,863	12/12/2001	Willibrord A. Groten	CDT 1756-2	2592

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT PAPER NUMBER

1764

DATE MAILED: 04/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/015,863

Applicant(s)

GROTEN, WILLIBRORD A.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11-16 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 11-16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 11-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fletcher et al. (US 5,290,427).

The Fletcher reference discloses a process for removing sulfur from a naphtha feedstock. The process comprises fractionating the naphtha to form two or more fractions of increasing boiling range. These two or more fractions are then hydrotreated to remove sulfur compounds. The hydrotreatment steps comprise passing the heavier fraction to a reactor where the fraction contacts a catalyst at hydrodesulfurization conditions to convert sulfur compounds present in the fraction to hydrogen sulfide. The lighter fraction is then passed to the reactor where it is mixed with the hydrodesulfurized heavier fraction. This mixture is then passed to a second catalyst bed

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where it is subjected to hydrodesulfurization conditions. The catalyst used in the hydrotreatment steps comprises Group VI and VIII metals on a support such as alumina. Metal combinations such as Ni-Mo and Co-Mo are explicitly disclosed. The reference also discloses that a light fraction that boils below about 150°F (65°C) contains mostly mercaptans as the sulfur compounds present and that these mercaptans may be removed by an extractive type process. Therefore, the Fletcher reference is interpreted to disclose the separation of the naphtha into three fractions with the lightest fraction that contains mostly mercaptans being subjected to a caustic wash, the heaviest fraction being subjected to hydrodesulfurization and then mixed with what is equivalent to the intermediate fraction with this mixture being subjected to further hydrodesulfurization. See column 3, lines 12-55; column 4, lines 5-60; column 6, lines 1-11; column 8, lines 64-68; column 9, lines 1-20 and 52-59; column 10, lines 65-68; column 11, lines 1-22; and column 12, lines 16-28 and 42-45.

The Fletcher reference does not disclose the use of two separate hydrodesulfurization reactors and does not disclose the boiling ranges for the fractions.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Fletcher by utilizing two separate reactors for the hydrodesulfurization steps because such an arrangement is equivalent to two separate catalyst beds in one reactor vessel.

It also would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Fletcher by utilizing the claimed fractions with the claimed boiling ranges because any boiling range fractions will be effectively treated as long as the heavier fraction is introduced at the inlet of the reactor.

Response to Arguments

The argument that the Fletcher reference does not provide any reason for the fractionation of the naphtha into three fractions is not persuasive because the combination of the teachings that a light fraction that boils below about 150°F (65°C) contains mostly mercaptans as the sulfur compounds present and that these mercaptans may be removed by an extractive type process and that two or more fractions are hydrotreated clearly discloses treating at least three fractions with the lightest fraction being treated by caustic washing and with the two heavier fractions being treated by hydrotreatment. Treating two fractions by hydrotreatment in the manner disclosed by Fletcher necessarily results in a heavy fraction and an intermediate fraction being treated in a similar manner as claimed.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

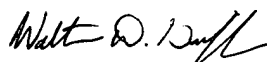
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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Walter D. Griffin
Primary Examiner
Art Unit 1764

WG
April 5, 2005